



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,625	08/05/2003	Kyeong Jin Kim	041501-5455-01	6368
9629	7590	04/19/2005	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004				DI GRAZIO, JEANNE A
ART UNIT		PAPER NUMBER		
				2871

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EJC

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/633,625	KIM, KYEONG JIN
	Examiner Jeanne A. Di Grazio	Art Unit 2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on RCE 1/18/2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 11-18 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 11-18 and 22 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Status of Claims***

Claims 11-18 and 22 are pending. Claim 11 has been amended per Applicant's RCE Amendment of January 18, 2005. Claims 1-10 and 19-21 have been cancelled per transmittal received August 5, 2003.

***Priority***

Priority to Korean Patent Application P2000-0066138 (Nov. 8, 2000) is claimed. This is a Continuation Patent Application of prior application 09/986,189 now United States Patent 6,642,992 B2.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 18, 2005 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,122,024 (to Molsen et al.) in view of United States Patent 6,313,894 B1 (to Sekine et al.).

As to claim 11 (amended), Molsen teaches and discloses switchable liquid crystal devices. Molsen shows in Figure 1, a first substrate (transparent substrate 1), a second substrate (transparent substrate 4) opposing the first substrate (transparent substrate 1), a liquid crystal layer (nematic liquid crystals 8) between the first (1) and second (4) substrates, the liquid crystal material having photopolymerisable material with one or more reactive groups mixed in with a non-chiral nematic liquid crystal material and whereby ultraviolet radiation forms a helical polymer network (See Column 4, Lines 32-67)(Applicant's "a liquid crystal layer between the first and second substrates, the liquid crystal material layer having a photo-reactant material and a liquid crystal, wherein the photo-reactant material and the liquid crystal form a polymer network.").

Molsen does not appear to explicitly specify at least one sealant along a periphery of one of the first and second substrates.

Sekine teaches and discloses a liquid crystal display with regions of polymer networks and with reference to Figures 5A and 5B, a main sealing agent (13) along a periphery of one of

first (11) and second (12) substrates. The main sealing agent (13) is used in the display to secure a liquid crystal material between substrates and to contain the liquid crystal material in a display region. The main sealing agent (13) serves to maintain the opposite glass and active matrix substrates parallel to each other and to contribute to a constant distance between the substrates (Column 7, Lines 43-48).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystal displays at the time the invention was made to modify Molsen in view of Sekine to incorporate at least one sealant along a periphery of one of first and second substrates into a liquid crystal display device (1) to contain the liquid crystal layer and photo-reactive material in a display region, (2) to contribute to the substrates remaining parallel with each other, and (3) to maintain a constant distance between the substrates.

As to claims 12 and 13, the main sealing agent may include thermosetting resins, UV-cured resins, and dual active resins which can harden in the presence of UV rays as well as heating (Sekine at Column 7, Lines 43-48).

As to claim 14, it may be presumed that the photo-reactant material includes one of a photo-reactant polymer and photo-reactant oligomer.

As to claim 15, although not illustrated, Sekine presumably contains at least an alignment layer for alignment of the liquid crystal layer (17). Molsen also includes alignment layers (Figure 1, alignment layers 3 and 6).

As to claim 16, Sekine has, with reference to Figure 7, black stripes (222) (Applicant's light-shielding layer), a color filter (fluorescence layer, 221), and common electrode (223) all on opposing substrate (220) as conventional elements of a color active matrix display.

As to claim 17, Sekine, with respect to Figure 5B, illustrates at least one spacer (14) to maintain substrate gap.

As to claim 18, the spacer of Figure 5B (spacer 14) appears columnar in shape.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,122,024 (to Molsen et al.) in view of United States Patent 6,313,894 B1 (to Sekine et al.) and further in view of United States Patent 5,872,609 (to Hiji et al.).

As to claim 22, Molsen does not appear to explicitly specify that the photo-reactant material remains uncured.

Hiji teaches and discloses a light control element and method wherein a liquid crystal and photo-setting uncured material are irradiated with coherent light beams to result in an anisotropic gel in which orientation is periodically fixed (Column 6, Lines 14-40).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Molsen in view of Hiji for an uncured photo-reactant material so that an anisotropic gel could be formed with periodically fixed orientation.

#### *Response to Arguments*

Applicant's arguments with respect to claim 11 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (571)272-2289. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeanne Andrea Di Grazio  
Patent Examiner  
Art Unit 2871

JDG



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER